

AMENDMENT UNDER 37 CFR § 1.111  
Serial No. 09/642,108

### REMARKS

A total of 116 claims remain in the present application. The foregoing amendments are presented in response to the Office Action mailed May 31, 2005, wherefore reconsideration of this application is requested.

By way of the above-noted amendments, original independent claims 1, 41, 67 and 82 have been amended to more clearly define features of the present invention. New claims 122 and 123 have been introduced to define subject matter closely similar to previously cancelled claims 3 and 44, which subject matter has been deleted from independent claims 1 and 41. Claim 85 has been amended to reflect the language of new claims 122 and 123.

In preparing the above-noted amendments, careful attention was paid to ensure that no new subject matter has been introduced. In particular, independent claims 1, 41, 67 and 82 have been amended to define methods and systems for "extending a data service of a legacy network through a broadband packet network", which includes a step of: "at an ingress gateway, accumulating a payload packet comprising a predetermined number of successive bytes of a data stream respecting the data service independently of a communications protocol of the data stream, the data stream being a legacy data stream originating in the legacy network and received by the ingress gateway through the legacy network." Support for this amended claim language is found throughout the originally filed specification.

Referring now to the text of the Office Action:

- a) claims 67 and 82 stand rejected under 35 U.S.C. § 102(b), as being unpatentable over the teaching of United States Patent No. 5,802,068 (Kudo);

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- b) claims 1, 4-5, 8-10, 24-26, 41, 45-56, 49-51, 65-66, 85-87, 90-92 and 106-107 stand rejected under 35 U.S.C. § 103(a), as being unpatentable over the teaching of United States Patent No. 5,802,068 (Kudo); and
- c) claims 6, 7, 11-23, 27-40, 47-48, 52-64, 68-81, 88-89, 93-105 and 108-121 stand objected to as being dependent on a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

As an initial matter, Applicant appreciates the Examiner's indication of allowable subject matter in claims 6, 7, 11-23, 27-40, 47-48, 52-64, 68-81, 88-89, 93-105 and 108-121. The Examiner's rejections of claims 67 and 82 under 35 U.S.C. § 102(b) and claims 1, 4-5, 8-10, 24-26, 41, 45-56, 49-51, 65-66, 85-87, 90-92 and 106-107 stand rejected under 35 U.S.C. § 103(a) are believed to be traversed by the above-noted claim amendments.

**Rejections under 35 U.S.C. § 102(b)**

As is well known in the art, the MPEG standard provides methods of digitally compressing and multiplexing audio and video signals to facilitate digital storage and transmission. However, it is also very well known that the MPEG standard is not a transmission protocol in any meaningful sense, for at least the reason that it provides no means of packet addressing and thus a network cannot properly route a 'naked' MPEG pack to a desired destination node of a network. In fact, the MPEG pack merely provides a container for the compressed audio and video signals, which enables those signals to be recovered (with some data-loss) for display. As is well known in the art, transmission of MPEG packs through a network is accomplished by inserting the MPEG packs into a PDU of the network. A common example of this function is the transport of MPEG traffic over TCP/IP, in which the MPEG packs are inserted into the payload of IP packets for transport through the internet.

Kudo teaches a method of data compression and multiplexing within the MPEG standard. The system of Kudo FIG. 1 merely accumulates/buffers the audio and video data,

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and encapsulates them within respective containers (MPEG packs – FIG. 2). Kudo does not teach or suggest insertion (or encapsulation) of the MPEG packs within a PDU of the broadband packet network, and neither does the MPEG standard. Thus the person of ordinary skill in the art will recognize that Kudo fails to teach a step of "encapsulating the container within a protocol data unit (PDU) of the broadband packet network" as required by independent claim 82. Consequently, Kudo cannot anticipate this claim. Similar reasoning applies in respect of independent claim 67, which requires "means for extracting a respective container from each received PDU". Since Kudo does not teach a step of encapsulation of containers within PDUs, it is axiomatic that Kudo does not teach extracting of containers from the PDUs.

In light of the foregoing, it is submitted that Kudo cannot anticipate either of claims 67 or 82. Accordingly, reconsideration and withdrawal of the Examiners rejection under 35 U.S.C. § 102(b) is believed to be in order.

**Rejections under 35 U.S.C. § 103(a)**

With reference to the Examiner's claim rejections under 35 U.S.C. § 103(a), and to the extent that similar objections might also be applied against claims 67 and 82, applicant offers the following comments.

Amended independent claims 1, 41, 67 and 82 define methods and systems for "extending a data service of a legacy network through a broadband packet network", in which "a legacy data stream originating in the legacy network and received by an ingress gateway through the legacy network" is accumulated "independently of a communications protocol of the data stream" and encapsulated into PDU's of the broadband packet network. Kudo does not teach or fairly suggest any equivalent to such methods and systems.

Kudo teaches a system (and method) for multiplexing audio and video data streams in accordance with the Motion Picture Experts Group (MPEG) standard. In accordance with Kudo, reduced video buffer size (and associated buffering delay) can be obtained by transmitting shorter audio packets, with so-called Padding Packets being used

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to make up the difference between the size of the audio packet and that of the standard MPEG pack. [See FIG. 2]. With this arrangement, audio packets are transmitted more frequently, so that synchronous transmission of the audio and video data signals can be accomplished with reduced buffering of the video data.

At col. 6, lines 60-67, Kudo teaches that "data other than the video data and the audio data can also be used", and that "a technique other than the MPEG system can be also used" as the data compression and multiplexing technique. However, while Kudo alludes to other possibilities, the only embodiment described is MPEG compression/multiplexing of audio and video signals. Kudo provides no examples of other signals that can be compressed and multiplexed in this manner. As such, the person of ordinary skill in the art will be forced to conclude that the systems and methods of Kudo are restricted to audio and video signals, and possibly other signal pairs that are closely similar to audio and video signals; that is, a pair of parallel signals having different data rates which must be transmitted synchronously with each other.

However, none of this is directly relevant to the problem of extending a data service of a legacy network through a broadband packet network. As described in the background of the present application, "the present communications network space is a patchwork of modern and legacy networks, each operating under respective different network models and protocols ... ; utilizing different transport media"; and frequently owned by different business entities." [page 2, line 27-page 3, lines 5] Each network provides a set of data services, and it is desirable to extend these services through a broadband packet network, at least because it provides a means of exploiting improved data transport capabilities of the broadband packet network.

At best, the methods and systems of Kudo provide a specific adaptation function, which encapsulates two data signals of different data rates into a stream of fixed-length containers. It is a matter of speculation whether or not this function could be made to work successfully as an adaptation function between legacy and broadband networks, since

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Kudo fails to provide any guidance in that respect. However, even if the methods of Kudo could be successfully applied to an adaptation service, the resulting system would still fail to meet the limitations of the presently claimed invention.

In particular, the present invention requires that "the data stream [is] a legacy data stream originating in the legacy network and received by the ingress gateway through the legacy network". Kudo does not provide any guidance what-so-ever as to the source of his audio and video signals. As such, a person of ordinary skill in the art will be forced to assume that these signals are obtained from a conventional source. As is well known in the art, this implies that the signals will be obtained either: directly from a storage medium or other audio/video signal handling hardware, which implies that there is no intervening network; or indirectly, following extraction/recovery of the signal(s) from a data stream conveyed through a network. Obviously, in the former case, there is no network, and thus any discussion of a data stream of that network is moot. In the later case, the audio and video signals are obtained from a data stream received through a network, but in this case Kudo (in combination with the known prior art) does not suggest compressing/multiplexing the received data stream itself (as in the present invention), but rather signals extracted from it.

Furthermore, to the extent that the audio signal alone (or the audio and video signals taken together) may be read onto the "data stream" of claim 1, Kudo does not accumulate a predetermined number of bytes. In fact, an unknown number of bytes of the audio signal are accumulated, and this number is subsequently detected and then used to construct a padding packet to fill the unused space in the MPEG pack. To the extent that the audio (low speed) signal forms all or part of the "data stream", it follows that Kudo accumulates an unknown number of bytes of the "data stream", contrary to claim 1.

To the extent that the video signal taken alone may be read onto the "data stream" of claim 1, it then becomes necessary to select (or otherwise isolate) the video signal from the audio signal. The skilled artisan will recognise that this requires either


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demultiplexing the video and audio signals from a common data stream, or selecting a channel carrying the video signal. Obviously, successful implementation of either of these alternatives is dependent on the communications protocol, contrary to claim 1.

In light of the foregoing, it is believed that the present invention is clearly distinguishable over the teaching of United States Patent No. 5,802,068 (Kudo). Thus it is believed that the present application is now in condition for allowance, and early action in that respect is courteously solicited.

If any extension of time under 37 C.F.R. § 1.136 is required to obtain entry of this response, such extension is hereby respectfully requested. If there are any fees due under 37 C.F.R. §§ 1.16 or 1.17 which are not enclosed herewith, including any fees required for an extension of time under 37 C.F.R. § 1.136, please charge such fees to our Deposit Account No. 19-5113.

Respectfully submitted,  
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